

Bellwork: 3/13/13

Perform the indicated operation:

1)  $(9-4i)^2$

$$(9-4i)(9-4i)$$

$$81 - 36i - 36i + 16i^2$$

$$81 - 72i + 16i^2$$

$$81 - 72i - 16$$

$$65 - 72i$$

Page 1

Rational

Section 8.2 - Graphing Reciprocal Functions using transformations

General Form:  $y = \frac{a}{x-h} + k$

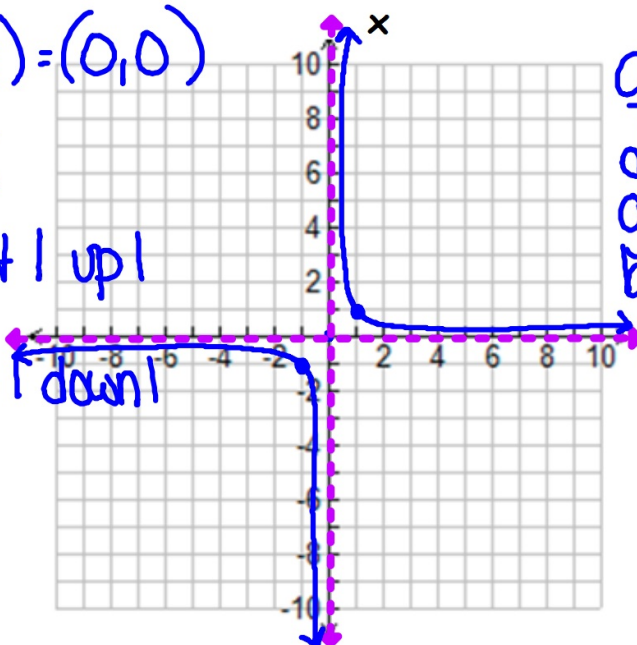
Graph of  $y = \frac{1}{x}$

$$(h,k) = (0,0)$$

$$a=1$$

right | up |

left | down |



Things to notice:

asymptotes:

dotted lines that graph approaches but can never touch.

$(h,k)$  creates the dotted lines

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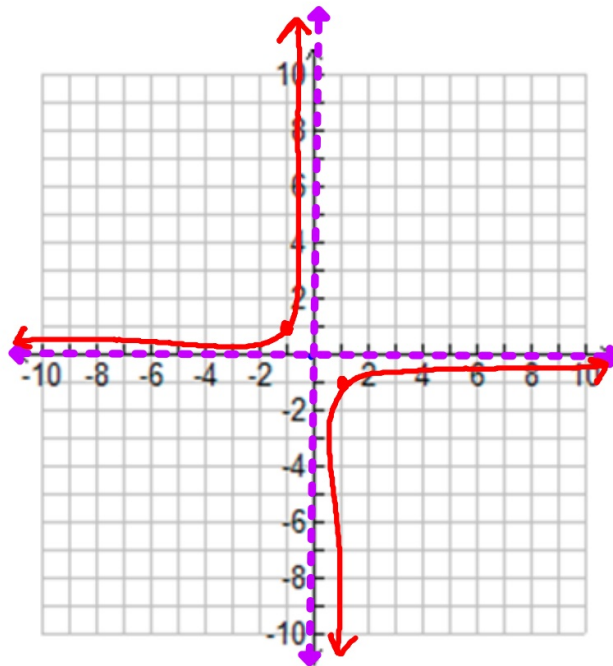
example 2:  $y = \frac{-1}{x}$

$$(h, k) = (0, 0)$$

$$a = -1$$

right 1 ~~down 1~~  
~~up 1~~

left 1 ~~up 1~~  
~~down 1~~



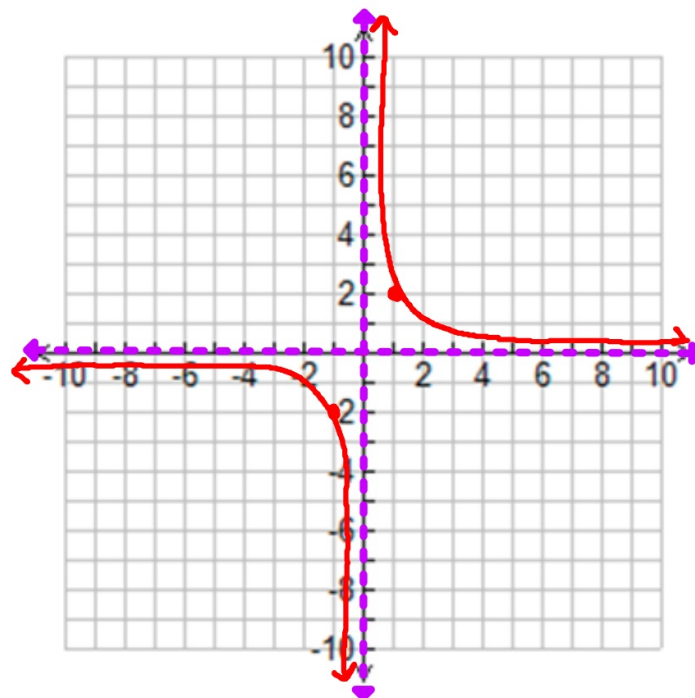
example 3:  $y = \frac{2}{x}$

$$(h, k) = (0, 0)$$

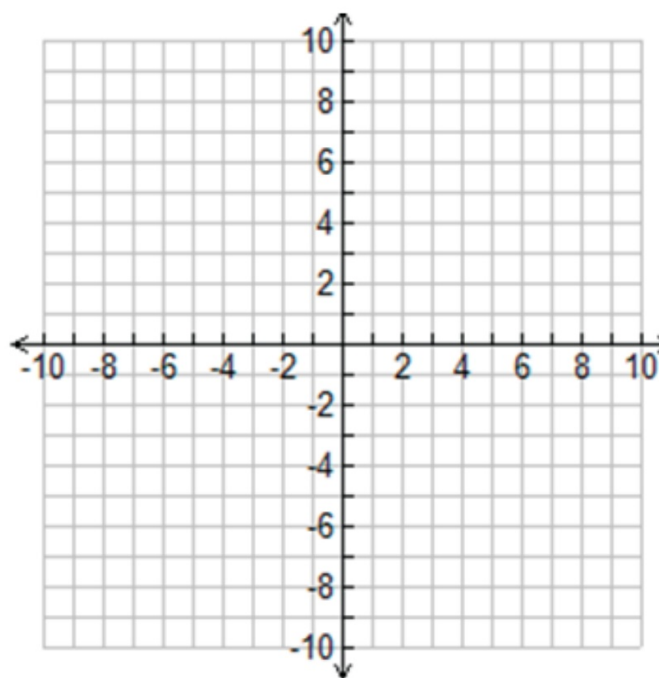
$$a = 2$$

right 1 up  $\times 2$

left 1 down  $\times 2$



example 4:  $y = \frac{-2}{x}$



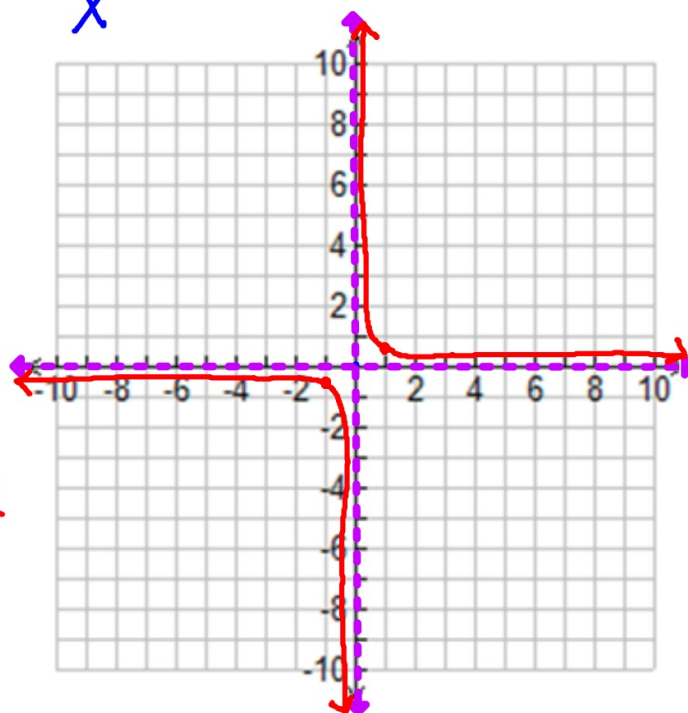
example 5:  $y = \frac{1}{2x}$

$(h, k) = (0, 0)$

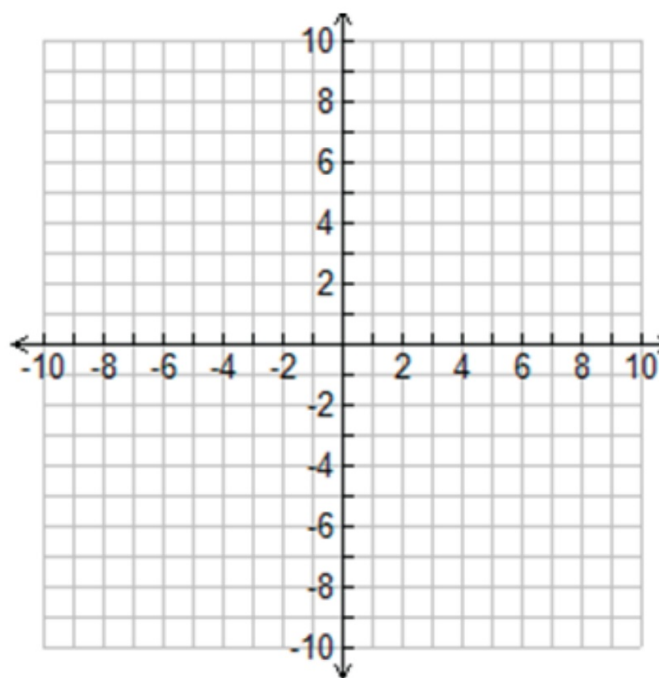
$a = \frac{1}{2}$

right 1 up  $\times \frac{1}{2}$

left 1 down  $\times \frac{1}{2}$



example 6:  $y = \frac{-1}{2x}$



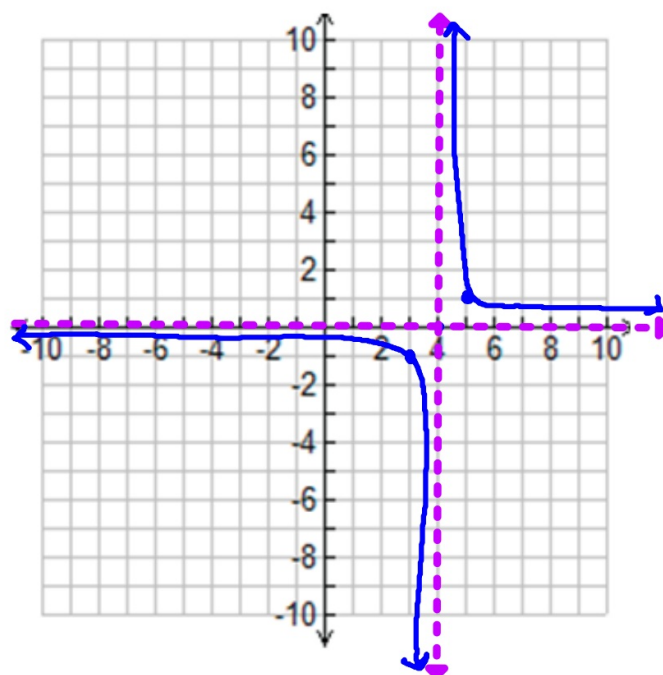
example 7:  $y = \frac{1}{x-4}$

$(h, k) = (4, 0)$

$a = 1$

right 1 up 1

left 1 down 1



example 8:  $y = \frac{1}{x} + 3$

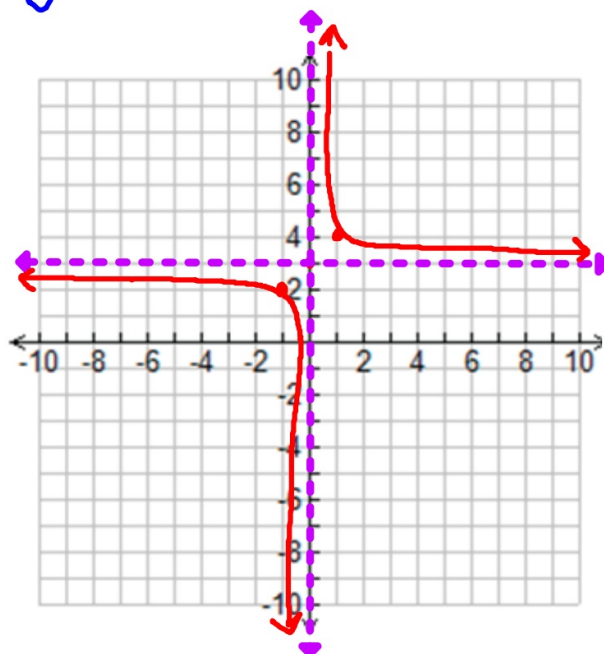
$$y = \frac{1}{x} + 3$$

$$(h, k) = (0, 3)$$

$$a = 1$$

right 1 up 1

left 1 down 1



example 9:  $y = \frac{1}{x+5} - 2$

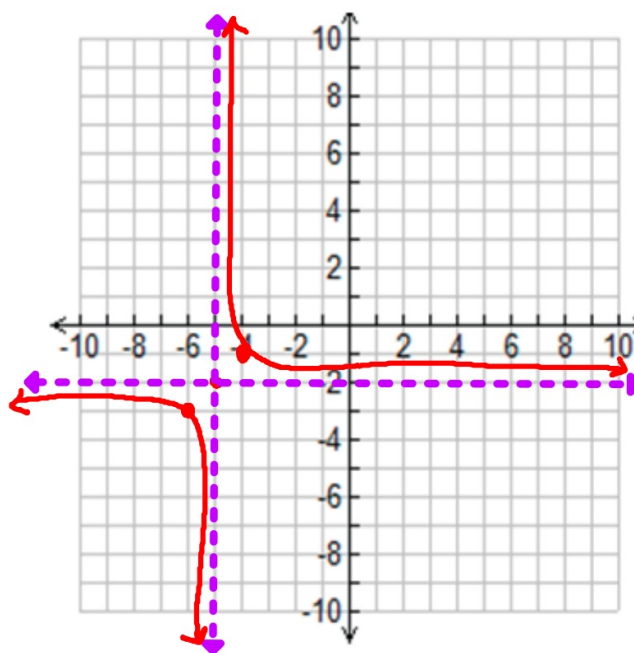
$$y = \frac{1}{x+5} - 2$$

$$(h, k) = (-5, -2)$$

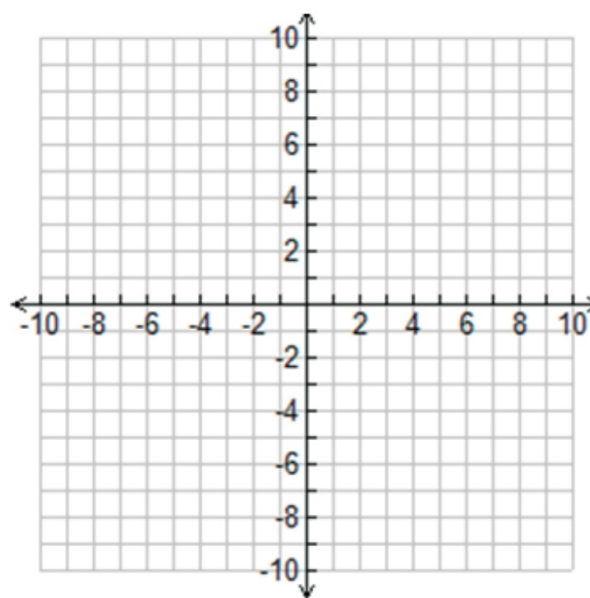
$$a = 1$$

right 1 up 1

left 1 down 1



example 10:  $y = \frac{1}{x-2} + 4$



example 11:  $y = \frac{-1}{x-2} - 3$

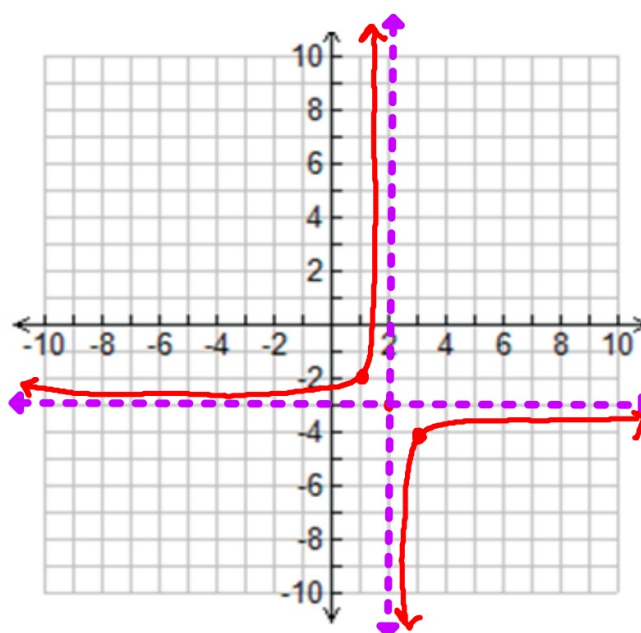
$y = \frac{-1}{x-2} - 3$

$(h, k) = (2, -3)$

$a = -1$

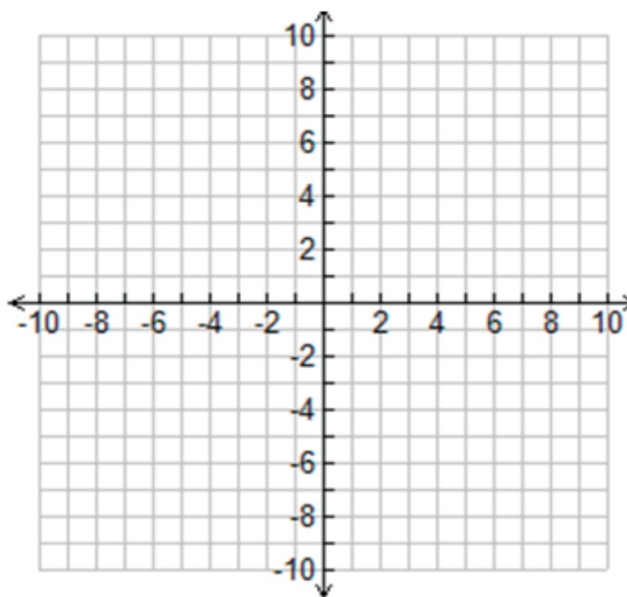
right 1 ~~up~~ down 1

left 1 ~~down~~ up 1





example 12:  $y = \frac{2}{x+1} - 6$



example 13:  $y = \frac{1}{2(x+1)} - 4$

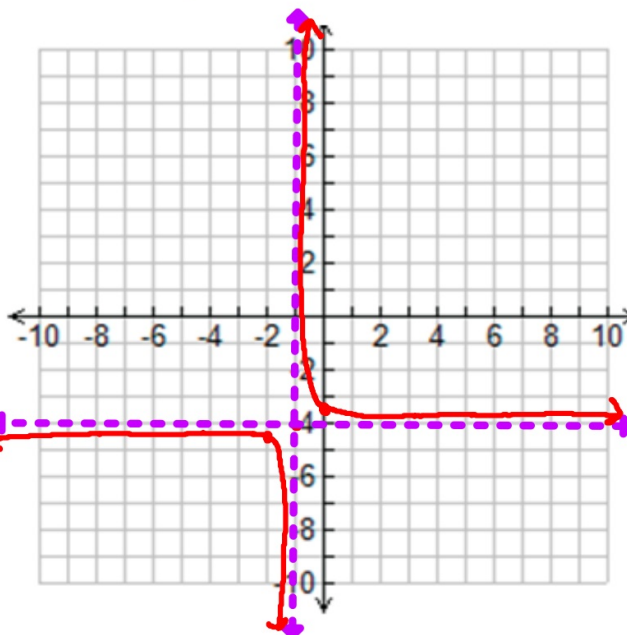
$y = \frac{1}{2(x+1)} - 4$

$(h, k) = (-1, -4)$

$a = \frac{1}{2}$

right 1 up  $\times \frac{1}{2}$

left 1 down  $\times \frac{1}{2}$



**Homework: pg 535 #16-22**



